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ABSTRACT

This research project was designed to investigate gymnastic activities in schools. Its main purpose is to investigate, at lower and middle levels, the objectives and methods of physical education in relation to pupils' physical development and interest in physical exercise at different ages. The measurement part of the project is tentatively slated to be conducted in Alingsas from spring 1973 to spring 1975. The following preliminary project components are described: background and questions; time schedule; survey variables, measurement part; and survey group. (JA)

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Title of project: Gymnastic Activities In Schools (the GAIS project)

In progress at: The Department of Educational Research, Gothenburg School of Education

Scientific leader and project leader: Associate Professor Lennart Levin

Survey leaders: Bert Aggestedt, BA, senior physical education teacher
Ulla Tebelius, BA
Lisbeth Wistrand, BA,

Historical background

Surveys of the organization of physical education, of pupil attitudes to different parts of the subject and of pupils' sporting activities during their leisure hours have been conducted in Sweden by Engström and Hedberg, among others. Together with Henrysson, Engström and Hedberg have published a polemical report (Engström, Hedberg, Henrysson, 1972) summarizing the results of their surveys, which covered the upper level of the Swedish comprehensive school (grade 8) and upper secondary school (grade 2). Since then Setterlind (1973), using questions in part identical to those occurring in the above mentioned questionnaire studies, has plotted the attitudes

SP 006 848

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of upper level pupils to different aspects of physical education in school. Similar experiments, possibly covering a somewhat wider range of problems, were judged desirable at the lower and middle levels of comprehensive school as well. During the school year 1971/72 a research group in Gothenburg received a planning grant to enable them to draw up guidelines for experiments of this kind. Part of this grant was earmarked for the arrangement of a conference on research into the psychology of physical education, the purpose of this conference being to provide information on completed, current and scheduled research in Sweden and the other Scandinavian countries and also to discuss existing project plans in concrete terms. This conference has been dealt with in the series of reports published by the Department (Levin et al., 1972) and in Tidskrift för Gymnastik nr 1, 1972, pp. 9-15. The school year 1972/73 has been devoted to reading, instrument testing and pilot surveys (see below, "Pilot studies"); the main survey is due to start at the beginning of the autumn term 1973 (see below, "Time schedule").

Purpose

The main purpose of the project is to investigate, at lower and middle level, the objectives and methods of physical education in relation to the pupils' physical development and their interest in physical exercise at different ages. Certain factors in their immediate environment which can be presumed to influence the pupils' interest in physical activities will be studied to a limited degree.

Note. The various research components are intended to form an integral whole. For practical reasons, however, the project has been divided into an objectives and methods part (survey leader: Wistrand) and a "measurement" part (survey leaders: Aggestedt and Tebelius).

Background and questions

When children start school this is probably the first time they have been subjected to systematic inducement to physical activity. Although the skill and interest of these beginners may vary where athletic activities are concerned, we know from experience that they are positively disposed towards physical education in school. In order for this basic positive attitude to be consolidated and in order for the pupils to find physical activity meaningful and enjoyable in the first place, the exercises given in school must correspond to the children's physical development, and their knowledge and experience of sports and athletics must be utilized for teaching purposes. The following points of inquiry, all of which are directly related to the purpose of the survey, will be penetrated:

a) the objectives part: What are the adequate objectives for physical education at lower and middle level? How are they to be defined? What degree of unanimity is there among "experts" concerning the objectives? How well does this expert opinion agree with the content of teacher education?

b) the measurement part: Do any changes occur in pupils' attitudes to physical education (and to physical activity and sports in general) during the lower and middle levels of comprehensive school? If so, what changes?

What factors influence the changes of attitude and interest which may thus occur?

What is the general physical fitness of lower and middle level pupils? What effect does their physical fitness have on their attitude to physical education?

How much do pupils know about physical training and sports amenities in their own locality? To what extent does the individual pupil (parents/brothers and sisters/friends) avail himself/herself of those amenities?

Time schedule

a) the objectives part: Collection of Swedish and foreign documents on the objectives of physical education during the early school years is at present in progress. During the autumn term 1973 the goal descriptions and definitions thus collected will be collated, possibly in the form of a taxonomy corresponding to that compiled by Klingberg (1970) for the teaching of literature in comprehensive school. During the autumn term 1974 a larger group of gymnastics and sports experts will be consulted via questionnaire concerning the objectives of physical education in schools. The same questionnaire will be administered to the teachers taking part in the measurement part (see below).

b) the measurement part: Starting in the autumn term 1973, about five classes each from grades 1-2 and 4-5 will be followed up during two school years. During this period physical status and attitude tests etc. (see sketch below) will be administered. Using this type of design the whole of the period grade 1 - grade 6 will be covered, in addition to which the survey groups in the middle of each level (grades 2 and 5 respectively) will contain twice as many pupils as other age groups. This ratio is illustraded in the sketch below.

Reports on the objectives and measurement parts will be issued successively and at the end of each part of the survey. A final report is expected during the spring term of 1975, though this may be an over-optimistic target, particularly where the measurement part is concerned; certain measurements will also be carried out during the spring term 1975.

	1973		1974		1975
	spring term	autumn term	spring term	autumn term	spring term
Lower level		grade 1 → grade 2 →		grade 2 → grade 3 →	
Middle level		grade 4 → grade 5 →		grade 5 → grade 6 →	

Survey variables (measurement part)

The four groups of pupils (grades 1-2 and 4-5) which are followed up for two years will be offered certain of the following tests at the beginning and end of each school year; measurements will thus be taken on four occasions.

Attitudes and interest: Middle level pupils will be given a questionnaire, lower level pupils will be interviewed (will be given picture tests in certain cases) concerning: General attitudes to physical education at school (number of periods desired, most enjoyable/most tedious, preferences with regard to exercises etc.), break and leisure activities, experience of parents' /brothers' and sisters' habits and intersts regarding physical exercise and sports.

Knowledge of physical education/athletics: The purpose of this measuring instrument is to investigate whether and, if so, when regarding athletics, knowledge of the effects of proper diet and exercise, knowledge concerning sporting and other activities (e.g. scouting) in their own locality.

Physical fitness test:

1. Muscular strength, dynamic and explosive.
1.1 The torso - sit-ups with legs bent in time to a metronome with a maximum number of repetitions.
1.2 The flexing muscles of the lower arm - with a hand dynamometer.
1.3 The flexing muscles of the elbow - using a dynamometer with fixed upper arm and constant elbow angle.
1.4 The stretching muscles of the legs - with vertical jumps with feet together, tape measure from torso to show how high the torso has been lifted above floor level.

2. Co-ordination, senso-motor and perceptual.
2.1 Standing long jump - correction must be made for pupils' height: longest jump of five attempts.

2.2 Zig zag running - 30 m on marked track, noting the time taken
2.3 Kicking a ball towards a marked area - following demonstration; number of goals in five attempts.

3. Fitness test. A final decision concerning measuring procedure has yet to be taken. A cycle ergometer test or some other, simpler procedure showing a high empirical correlation with the cycle ergometer test will be used.

Parental attitudes: Parents will be given a questionnaire at the beginning and end of the survey. This questionnaire is designed to measure the active interest taken by parents in physical exercise and sport and their interest and involvement in their children's leisure activities. Housing conditions, size of family. leisure occupations etc. will also be plotted.

Survey group

It has been preliminarily decided to conduct the measurement part of the project in Alingsås. During the spring term 1973 lower and middle level teachers there will be approached concerning their interest in the subject physical education. The purpose of this plotting is to ensure, as far as possible, that the teachers recruited for the experimental activities do not display a pronounced positive or negative bias. Only school classes whose regular class teachers take them for physical education in school will be utilized. Schools will be selected with a view to geographical distribution: this is probably important with regard to the location of sports and athletics amenities. The school classes ultimately selected should comprise relatively equal proportions of boys and girls in view of the differences of physical development between the sexes and possible differences of teaching methodology which might be occasioned by uneven proportions of girls and boys in the classes.

Pilot studies

The construction, testing and revision of physical fitness tests and of interest and attitude questionnaires for pupils and parents have been continuously in progress since the spring term of 1972. Work on the testing of the physical fitness test will be presented in a separate report during the spring term 1973.

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Project address:

Nordostpassagen 28 A
413 11 GÖTEBORG

phone 031/14 73 28